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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/631,291 | 07/31/2003 | Norval J. Weimken | 00-197 | 3250 |
| 7590 | 05/20/2005 | | | |
| | | | EXAMINER | |
| | | | GIMIE, MAHMOUD | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 3747 | |

DATE MAILED: 05/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|------------------------------|------------------------|---------------------|--|
| | 10/631,291 | WEIMKEN ET AL. | |
| Examiner | Art Unit | | |
| Mahmoud Gimie | 3747 | | |

– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 22 April 2005.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-20 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-20 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 31 July 2003 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
4) Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
5) Notice of Informal Patent Application (PTO-152)
6) Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) The invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Crofts et al (6,837,221).

Crofts discloses a fuel injector comprising: an injector body (12) defining a nozzle outlet (20) and a needle control passage (86), a needle valve member (18) positioned in said injector body (12) and including a closing hydraulic surface (84) exposed to fluid pressure in said needle control passage (86), and being movable between an open position in which said nozzle outlet is open, and a closed position in which said nozzle outlet is blocked, an orifice member (60) positioned in said injector body (12) and defining a flow passage (56) with relatively restricted flow area, and being movable between a first position and a second position, said needle valve member (18) displacing fluid through said flow passage (56) when moving toward said open position, and said needle control passage (86) having a relatively unrestricted flow area to fluid flowing toward said closing hydraulic surface over at least a portion of movement of said

needle valve member between said open position and said closed position, see column 5 and lines 61-67 for movable control valve member 60 and column 6 and lines 27-67 for further details.

With regard to claim 2, said orifice member (60) defines a portion of said needle control passage (86).

With regard to claim 3, a compressed spring (22) operably positioned in said injector body to bias said orifice member toward one of said first position and said second position.

With regard to claim 4, said compressed spring is also operably coupled to bias said needle valve member toward said closed position

With regard to claim 5, said spring is compressed between said needle valve member and said orifice member.

With regard to claim 6, said orifice member (60) is a variable area valve member (column 9 and lines 55-56), said flow passage fluidly connects an upstream portion of said needle control passage (86) to a downstream portion of said needle control passage when said variable area valve member is in said first position; and said needle control passage has a relatively unrestricted flow area when said variable area valve member is in said second position.

With regard to claims 7, said variable area valve member defines at least a portion of at least one additional flow passage (54), and said relatively unrestricted flow area includes a combination of said flow passage and said at least one additional flow passage.

With regard to claim 8, said at least one additional flow passage (54) includes an annular flow area between said variable area valve member and said injector body.

With regard to claims 9, said at least said variable area valve member defines one additional flow passage

With regard to claim 10, said injector body includes a valve seat; and said variable area valve member being in contact with said valve seat when in said first position, but being out of contact with said valve seat when in said second position.

With regard to claims 11-20, see above and figures 1-5.

Response to Arguments

3. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

Applicants argued that Crofts et al fails to disclose applicants claims requirement of "the needle valve member displace fluid through a restricted passage when moving from its closed position to its open position, and requires flow to the closing hydraulic surface of the needle valve member via an unrestricted flow area over a portion of the needle valve member's movement from its open position to its closed position". This argument is not persuasive because of the following reasons:

Crofts et al discloses said needle valve member (18) displacing fluid through said flow passage (56) when moving toward said open position, and said needle control passage (86) having a *relatively* unrestricted flow area to fluid flowing toward said closing hydraulic surface (84) over at least a portion of movement of said needle valve member

between said open position and said closed position, see column 5 - lines 61-67 and column 6-lines 27-67 for further details.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mahmoud Gimie whose telephone number is 571-272-4841. The examiner can normally be reached on Tuesday-Friday between 7 a.m. -3:30 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Yuen can be reached on 571-272-4856. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MG


MAHMOUD GIMIE
PRIMARY EXAMINER

5/16/05